

INTRODUCTION

Improving the health status of children through the prevention of disease, disability, and death has long been an objective of public health policy at national, state, and local levels. This study is part of an ongoing effort by the Center for Health and Environmental Statistics to report patterns in childhood and adolescent mortality, thereby identifying areas in need of prevention efforts (1,2).

In the last few decades, predominant causes of death among the young, such as infectious disease and cancer, have been replaced by injury and violence. In fact, childhood and adolescent mortality is distinguished from mortality of older persons by a greater proportion of deaths due to injuries. Fifty-six percent of all 1983-87 deaths to North Carolinians ages one to nineteen were the result of unintentional injury; an additional 11.2 percent of all deaths of young people were attributed to the intentional acts of suicide and homicide.

A special focus of this study is the mortality of poor children, specifically, those whose families receive AFDC (Aid to Families with Dependent Children). The mortality rate for AFDC youth is nearly three times the death rate of children of higher economic status. Understanding the nature and cause of this disparity is a prerequisite to designing and implementing maternal and child health programs needed to ameliorate this differential.

METHODS

In calculating the percent changes in childhood mortality in North Carolina from 1974-78 to 1983-87, deaths were tabulated according to the decedents' age, race, sex, and cause of death. Population estimates for 1974-78 and 1983-87 were provided by the North Carolina Office of State Budget and Management. Codes from the Eighth Revision of the *International Classification of Diseases* (ICD) were used for the classification of 1974-78 causes of death, and codes from the Ninth Revision of the *International Classification of Diseases* were used for the classification of 1983-87 causes of death. Causes of death and the corresponding ICD codes are listed in Appendix I.

Each revision of the ICD produces some break in the comparability of cause-of-death statistics. Measures of this discontinuity, ratios of comparability, were constructed by Klebba, *et al.* (3). The two revisions compare very well, with ratios of 1.00 ± 0.01 for all causes of death examined in this report

with only a few exceptions. In the computation of percent changes in death rates between 1974-78 and 1983-87 (Table 9), 1974-78 infant death rates for perinatal conditions for each race/sex category were adjusted by multiplying the rates by the comparability ratio 0.8492. Likewise, the infant death rates for pneumonia/influenza were adjusted using the 0.7471 comparability ratio, and the 1974-78 death rates for pneumonia/influenza for ages 1-19 were adjusted to reflect the 0.9264 comparability ratio.

The statistical significance levels of the percent changes over time in Tables 9 and 10 are derived from the natural log of the ratio of the two rates as described in Appendix II. Ratios not significantly different from 1.0 at $p < 0.05$ are not reported. Percent changes which are incalculable due to base rates of zero also are not reported.

National mortality rates for 1983-87, which would have been compared to state 1983-87 mortality rates, were not available at the time of this writing. Because of this, the 1983-86 national mortality rates were selected for comparison to the state rates. National rates for the period 1983-86 are not published as such and had to be computed.

Except for heart disease, national deaths are tabulated in the same ICD groupings shown in Appendix I. These figures were taken from Tables 1-8, 1-25, and 2-16 of the 1983-1986 publications of the *Vital Statistics of the United States*, Volume II - Mortality, Part A (4-7). Then, the figures were divided by 1983-86 national childhood population figures derived from the United States Bureau of the Census March 1988 estimates of 1980-1987 U.S. population (6). Because total heart disease deaths were not tabulated, U.S. 1983-86 heart disease rates were estimated by: 1) multiplying each annual rate by its corresponding population to yield annual deaths; 2) summing the annual deaths for the 1983-86 period; and 3) dividing the 1983-86 heart disease deaths by the 1983-86 population. The computation and reporting in Tables 12 and 14 of statistically significant percent differences between the state and national rates are done in the same manner as are the statistically significant percent differences between the 1974-78 and 1983-87 state rates, as previously discussed.

Cause-specific North Carolina childhood mortality is compared by race and sex in Tables 15 and 16 via race and sex ratios. The statistical significance of these ratios is also derived from the natural log of the ratio of the two rates as described in Appendix II. Ratios are reported if they were found to be